

IN THE CLAIMS:

A complete listing of the claims is set forth below. Please amend the claims as follows:

1. **(Currently Amended)** A method for solving a supply chain planning problem, comprising the steps of:

~~dividing~~ decomposing the supply chain planning problem into a plurality of independent sub-problems;

forming a plurality of distributed sub-problem partitions, each of said distributed sub-problem partitions including a plurality of related items and associated with a respective sub-problem; independent sub-problem of said supply chain planning problem;

loading data into a plurality of distributed database partitions, said data associated with said plurality of related items, and each of said distributed database partitions associated with a respective one of each of said distributed sub-problem partitions; and

solving each of said plurality of said sub-problems; independent sub-problems by separate processes operating in parallel in a distributed database processing environment.

2. **(Currently Amended)** The method of Claim 1, further comprising the steps of:

forming a plurality of clusters, each of said clusters including said plurality of related items; and

forming said plurality of distributed sub-problem partitions from said plurality of clusters.

3. **(Currently Amended)** The method of Claim 1, wherein the number of distributed sub-problems and database partitions is equal to three.

4. **(Original)** The method of Claim 1, wherein said plurality of related items are related by one or more pre-defined relationship rules.

5. **(Original)** The method of Claim 2, wherein the step of forming said plurality of said clusters further comprises a step of assigning a CLUSTER_ID to each item of said plurality of related items.

6. **(Currently Amended)** The method of Claim 2, wherein the step of forming a plurality of distributed sub-problem partitions from said plurality of clusters further comprises a step of sizing said distributed sub-problem partitions as close to equal as possible.

7. **(Currently Amended)** The method of Claim 1, wherein the step of solving each of said plurality of said distributed sub-problems further comprises a step of solving said plurality of independent sub-problems in parallel.

8. **(Canceled)**

9. **(Currently Amended)** A method for solving a supply chain planning problem, comprising the steps of:

decompositioning the supply chain planning problem into a plurality of independent sub-problems;

storing data associated with at least one new item in a temporary database location;

forming at least one cluster, said at least one cluster including said data associated with said at least one item;

merging said at least one cluster with at least one cluster associated with at least one distributed sub-problem partition;

loading said data into at least one distributed database partition, said at least one distributed database partition associated with said at least one distributed sub-problem partition; and

solving said at least one sub-problem. independent sub-problem by separate processes operating in parallel in a distributed database processing environment.

10. **(Currently Amended)** A system for solving a supply chain planning problem, comprising:

a plurality of independent sub-problems decomposed from the supply chain planning problem;

a database, said database including a plurality of distributed partitions, each partition of said plurality of distributed partitions associated with a respective independent sub-problem of said supply chain planning problem; and

at least one processor operating in a distributed database processing environment, the at least one processor a plurality of processors, each processor of said plurality of processors associated with a respective partition of said plurality of distributed partitions, said and plurality of processors being collectively operable to:

form a plurality of distributed sub-problem partitions, each of said distributed sub-problem partitions including a plurality of related items and associated with a respective sub-problem; independent sub-problem of said supply chain planning problem;

load data into a plurality of distributed database partitions, said data associated with said plurality of related items, and each of said distributed database partitions associated with a respective one of each of said distributed sub-problem partitions; and

solve said plurality of said sub-problems. independent sub-problems by separate processes operating in parallel in the distributed database processing environment.

11. **(Currently Amended)** The system of Claim 10, said plurality of processors further being collectively further operable to:

form a plurality of clusters, each of said clusters including said plurality of related items; and

form said plurality of distributed sub-problem partitions from said plurality of clusters.

12. **(Currently Amended)** The system of Claim 10, wherein the number of distributed sub-problems and database partitions is equal to three.

13. **(Original)** The system of Claim 10, wherein said plurality of related items are related by one or more pre-defined relationship rules.

14. **(Currently Amended)** The system of Claim 11, wherein ~~each of said plurality of processors~~ said at least one processor is further operable to:
assign a CLUSTER_ID to each item of said plurality of related items.

15. **(Currently Amended)** The system of Claim 10, wherein ~~each of said plurality of processors~~ said at least one processor is further operable to:
size said distributed sub-problem partitions as close to equal as possible.

16. **(Currently Amended)** The system of Claim 10, wherein ~~each of said plurality of processors~~ said at least one processor is further operable to:
solve said plurality of independent sub-problems in parallel.

17. **(Canceled)**

18. (Currently Amended) A system for solving a supply chain planning problem, comprising:

a plurality of independent sub-problems decomposed from the supply chain planning problem;

a database, said database comprising a plurality of distributed partitions and a temporary storage location, each partition of said plurality of distributed partitions associated with a respective independent sub-problem of said supply chain planning problem; and

at least one processor operating in a distributed database processing environment, the at least one processor a plurality of processors, each processor of said plurality of processors associated with a respective partition of said plurality of distributed partitions, said and plurality of processors being collectively operable to:

store data associated with at least one new item in the temporary database location;

form at least one cluster, said at least one cluster including said data associated with said at least one item;

merge said at least one cluster with at least one cluster associated with at least one distributed sub-problem partition;

load said data into at least one distributed database partition, said at least one distributed database partition associated with said at least one distributed sub-problem partition; and

solve said at least one sub-problem. independent sub-problem by separate processes operating in parallel in a distributed database processing environment.

19. **(Currently Amended)** Software for solving a supply chain planning problem, the software being embodied in computer-readable media and when executed operable to:

divide decompose the supply chain planning problem into a plurality of independent sub-problems;

form a plurality of distributed sub-problem partitions, each of said distributed sub-problem partitions including a plurality of related items and associated with a respective sub-problem; independent sub-problem of said supply chain planning problem;

load data into a plurality of distributed database partitions, said data associated with said plurality of related items, and each of said distributed database partitions associated with a respective one of each of said distributed sub-problem partitions; and

solve each of said plurality of said sub-problems. independent sub-problems by separate processes operating in parallel in a distributed database processing environment.

20. **(Currently Amended)** The software of Claim 19, when executed further operable to:

form a plurality of clusters, each of said clusters including said plurality of related items; and

form said plurality of distributed sub-problem partitions from said plurality of clusters.

21. **(Currently Amended)** The software of Claim 19, wherein the number of distributed sub-problems and database partitions is equal to three.

22. **(Original)** The software of Claim 19, wherein said plurality of related items are related by one or more pre-defined relationship rules.

23. **(Original)** The software of Claim 20, wherein forming said plurality of said clusters further comprises assigning a CLUSTER_ID to each item of said plurality of related items.

24. **(Currently Amended)** The software of Claim 20, wherein forming a plurality of distributed sub-problem partitions from said plurality of clusters further comprises sizing said distributed sub-problem partitions as close to equal as possible.

25. **(Currently Amended)** The software of Claim 19, wherein solving each of said plurality of said distributed sub-problems further comprises solving said plurality of distributed sub-problems in parallel.

26. **(Canceled)**

27. (Currently Amended) Software for solving a supply chain planning problem, the software being embodied in computer-readable media and when executed operable to:

decompose the supply chain planning problem into a plurality of independent sub-problems;

store data associated with at least one new item in a temporary database location;

form at least one cluster, said at least one cluster including said data associated with said at least one item;

merge said at least one cluster with at least one cluster associated with at least one distributed sub-problem partition;

load said data into at least one distributed database partition, said at least one distributed database partition associated with said at least one distributed sub-problem partition; and

solve said at least one sub-problem. independent sub-problem by separate processes operating in parallel in a distributed database processing environment.